

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|  |  |  |
|--|--|--|
| Applicant's or agent's file reference<br><b>P041191P0</b>        | <b>FOR FURTHER ACTION</b><br>see Form PCT/ISA/220<br>as well as, where applicable, item 5 below. |  |
| International application No.<br><b>PCT/JP2005/022725</b>        | International filing date (day/month/year)<br><b>06/12/2005</b>                                  | (Earliest) Priority Date (day/month/year)<br><b>06/12/2004</b> |
| Applicant<br><br><b>MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.</b> |  |  |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant  
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant  
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 3  
☒ as suggested by the applicant  
☐ as selected by this Authority, because the applicant failed to suggest a figure  
☐ as selected by this Authority, because this figure better characterizes the invention  
 b. ☐ none of the figures is to be published with the abstract

## INTERNATIONAL SEARCH REPORT

International application No

PCT/JP2005/022725

**A. CLASSIFICATION OF SUBJECT MATTER**  
F04B39/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**Minimum documentation searched (classification system followed by classification symbols)  
F04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | EP 1 338 795 A (MATSUSHITA REFRIGERATION COMPANY) 27 August 2003 (2003-08-27)<br>abstract<br>column 9, line 53 - column 17, line 17<br>figures 1-11   | 1-3,5-7               |
| X         | -----<br>PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 12,<br>5 December 2003 (2003-12-05)<br>-& JP 2004 293464 A (MATSUSHITA ELECTRIC IND CO LTD), 21 October 2004 (2004-10-21)<br>abstract; figures 2-4 | 1-3,5-7               |
| X         | -----<br>US 2004/179955 A1 (LEE SUNG TAE)<br>16 September 2004 (2004-09-16)<br>abstract<br>paragraph '0047! - paragraph '0057!<br>figures 1-6<br>-----<br>-/--  | 1-3,6,7               |



Further documents are listed in the continuation of Box C.



See patent family annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

2 February 2006

Date of mailing of the international search report

10/02/2006

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## INTERNATIONAL SEARCH REPORT

International application No

PCT/JP2005/022725

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | PATENT ABSTRACTS OF JAPAN<br>vol. 2000, no. 08,<br>6 October 2000 (2000-10-06)<br>& JP 2000 130147 A (MATSUSHITA REFRIG CO<br>LTD), 9 May 2000 (2000-05-09)<br>abstract; figures 1-8<br>----- | 1-3,5-7               |
| X         | US 6 206 135 B1 (KIM TAE MIN ET AL)<br>27 March 2001 (2001-03-27)<br>abstract<br>column 8, line 8 - column 9, line 15<br>figures 14-17<br>-----   | 1-5                   |
| X         | PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 04,<br>2 April 2003 (2003-04-02)<br>& JP 2002 349436 A (MATSUSHITA REFRIG CO<br>LTD), 4 December 2002 (2002-12-04)<br>abstract<br>-----           | 1-4,6,7               |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/JP2005/022725

| Patent document<br>cited in search report |    | Publication<br>date | Patent family<br>member(s)  | Publication<br>date  |
|---|----|---------------------|---|--|
| EP 1338795                                | A  | 27-08-2003          | AU 2409502 A<br>BR 0115644 A<br>CN 1494636 A<br>WO 0242644 A1<br>JP 3677447 B2<br>JP 2002161855 A<br>US 2005100456 A1 | 03-06-2002<br>06-07-2004<br>05-05-2004<br>30-05-2002<br>03-08-2005<br>07-06-2002<br>12-05-2005 |
| JP 2004293464                             | A  | 21-10-2004          | BR 0403929 A<br>CN 1697931 A<br>EP 1491767 A1<br>WO 2004085849 A1<br>US 2005207920 A1                                 | 04-01-2005<br>16-11-2005<br>29-12-2004<br>07-10-2004<br>22-09-2005                             |
| US 2004179955                             | A1 | 16-09-2004          | BR 0301430 A<br>CN 1530543 A<br>JP 2004278507 A   | 07-12-2004<br>22-09-2004<br>07-10-2004   |
| JP 2000130147                             | A  | 09-05-2000          | NONE  |  |
| US 6206135                                | B1 | 27-03-2001          | NONE  |  |
| JP 2002349436                             | A  | 04-12-2002          | NONE  |  |